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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,502	03/01/2004	Kanu G. Shah	60680-1843	1038

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EXAMINER

BISSETT, MELANIE D

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 05/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/790,502	<b>Applicant(s)</b> SHAH ET AL.	
	<b>Examiner</b> Melanie D. Bissett	<b>Art Unit</b> 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 25-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 25-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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1. The double patenting rejections have been withdrawn, but the prior art rejections have been maintained.

***Terminal Disclaimer***

2. The terminal disclaimer filed on 4 March 2005 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US 6,730,363 has been reviewed and is accepted. The terminal disclaimer has been recorded.

***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pellegri et al. in view of Siebert.
5. From a prior Office action:

Pellegri teaches an improved bipolar separator for electrochemical cells, where the cells may be used in fuel cells (abstract; col. 1 lines 7-11). The separators are substantially impermeable to diffusion of hydrogen, are rigid and are protected from discharge of anionic species (col. 2 lines 33-38). The separator plates are made by molding carbon, graphite, or metallic powder into a thermosetting resin (col. 2 lines 60-68). Insulating coatings for the separators include polyester, phenolic, furanic, and epoxide resins (col. 4 lines 44-53). The example shows a separator coated with a resin coating to a thickness of 200  $\mu\text{m}$ , where the coating is cured with heat. Pellegri fails to teach a coating layer of less than about 150  $\mu\text{m}$  thick. However, because of the insulative properties of the coating, it is the examiner's position that it would have been prima facie obvious to apply the coating at any thickness to balance cost and insulation properties of the cell structure.

Pellegri applies as above, failing to mention the use of infrared-curable sealant materials comprising epoxy resin and acrylonitrile butadiene copolymer. Siebert teaches the use of

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compositions comprising epoxy resin, polybutadiene-acrylonitrile rubber, and an amine crosslinking agent (example 1), where the mixture is cast onto a substrate and thermally cured (col. 7 lines 33-50). The compositions can be used as castable gaskets, seals, and o-rings (col. 7 lines 51-57). It is the examiner's position that it would have been prima facie obvious to use the epoxy coatings of Siebert's invention as gaskets in Pellegri's invention, since the epoxy compositions of Siebert's invention are castable and hence more easily applied. Regarding the limitations to "polymerized or cross-linked in response to infrared radiation," it is the examiner's position that the cured coatings of the reference would be indistinguishable from those cured by infrared radiation. It is the examiner's position that the claimed cure process in this case would not provide a patentably distinct product.

6. Claims 25 and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pellegri et al. in view of Ying et al.

7. From a prior Office action:

Pellegri applies as above, failing to mention coatings cured by methods other than heating. Ying discloses a protective coating for separators in electrochemical cells, where a protective coating is applied to a microporous layer (abstract). The coating may be coated and cured by heat, UV light, visible light, infrared radiation, and electron beam radiation (col. 7 lines 48-55), and the separators may be used in fuel cell applications (col. 11 lines 9-15). Ying teaches combining an ethoxylated diacrylate with a urethane acrylate and a photosensitizer, coating the mixture at a thickness of 4 microns onto a substrate, and exposing the coating to UV lamps for 30 seconds to cure (example 1). The protective coatings enhance the flexibility and toughness of the separator (col. 13 lines 60-65). Therefore, it is the examiner's position that it would have been prima facie obvious to use the protective coatings of Ying's invention in Pellegri's electrochemical cells and to use any cure method necessary to improve the toughness of the separators.

8. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pellegri et al. in view of Ying et al. as applied to claims 25 and 27-28 above, and further in view of Canfield.

Pellegri and Ying apply as above for the process of sealing a fuel cell plate, failing to mention the application of the coating by screen printing. However, Canfield shows the conventionality of screen printing a gasket onto a fuel cell plate (Figure 6, col. 4 lines 40-51). It is the examiner's position that it would have been prima facie obvious to use a screen printing

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technique to apply the gasket layer of Pellegri's and Ying's invention to provide a patterned discontinuous gasket layer having equally improved insulative properties.

### ***Response to Arguments***

9. In response to the applicant's arguments that the examiner has not shown that the coatings of the reference would be indistinguishable from those cured by infrared radiation, it is noted that the crosslinking materials used in the reference to form the coatings are the same as those used by the applicant (see specification, [0012]).

Regardless of cure process, the resulting product would be the same. The applicant has not shown that the cure process provides a different product.

10. Regarding the applicant's arguments that the products' distinctness is irrelevant to the process claims, it is noted that it has been the examiner's position that it would have been obvious to perform the applicant's claimed process in view of the teachings of Ying et al.

11. Regarding the applicant's arguments that the primary references use different methods to overcome warpage problems than the applicant or Ying, it is noted that the references are concerned with the same field of endeavor; i.e. coatings for separator plates. Thus, the references are analogous. Further, it is noted that the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). In this case, Ying has discovered coatings having improved toughness.

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One of ordinary skill in the art would look to combine Ying with Pellegrini to improve the toughness of the coatings.

12. In response to the applicant's arguments that the primary references teach away from the use of radiation-polymerized coatings by teaching the use of hardeners or low-temperature heat-curable coatings, it is noted that such teachings do not teach away from the use of radiation-polymerized coatings. Although the primary references teach certain coatings for the invention, they do not exclude coatings having improvements therein. The mere preference for one type of coating does not teach away from the use of an improved coating. Ying has provided a teaching of a coating having improved properties and would therefore be combinable with the primary references.

13. Regarding the applicant's arguments that the motivation to combine Pellegrini and Siebert comes from a statement by the examiner and not from the references, it is noted that the Siebert reference teaches the coatings as castable materials. Thus, one skilled in the art would be guided to use the coatings for their castable nature. Regarding the applicant's arguments that the claimed invention teaches away from casting coatings, this is irrelevant to the combination of the two cited references. If one skilled in the art would be motivated to combine the references for any reason taught by the references, a prima facie case of obviousness may be shown.

14. In response to applicant's argument that the references teach different motivations for the claimed process steps or product limitations, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences

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would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

### ***Conclusion***

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie D. Bissett whose telephone number is (571) 272-1068. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Melanie D. Bissett  
Patent Examiner  
Art Unit 1711

mdb